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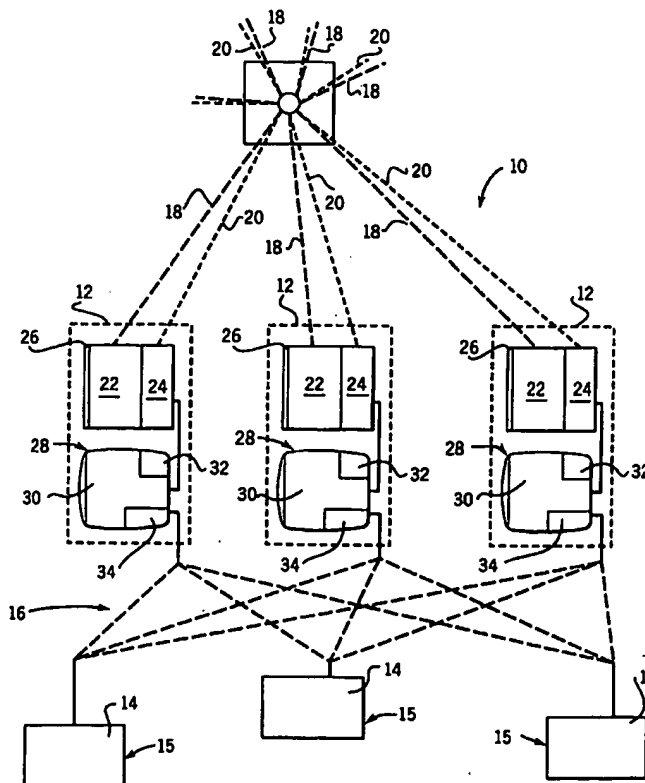
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(54) Title: MULTIMEDIA DATA TRANSFER SYSTEM

## (57) Abstract

A system (10) allows a user to obtain additional data related to information being broadcast via a given media. The entire system (10) includes a data distribution station (11) that emits a main signal portion (18) and a secondary signal portion (20) having a signature corresponding to the main signal portion (18). A receiver system (12) receives the main signal portion (18) and converts it to a form perceptible by an individual. It also receives the secondary signal portion (20), which would typically represent a telephone number. The user can selectively transmit data carried by the secondary signal portion (20) to a specific site (15). This specific (15) site includes a data relay system (14) able to receive the transmitted secondary signal portion (20) and in response transmit specific data back to the receiver system (12) for storage and use by the individual.



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## DESCRIPTION

### MULTIMEDIA DATA TRANSFER SYSTEM

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## TECHNICAL FIELD

The present invention relates generally to a system by which a person can obtain desired data related to a product or service of interest, and particularly to a system that permits a person viewing or listening to information broadcast via a given media (e.g., audible information over a radio or visual/audible information over a television) to obtain additional data related to the information being perceived.

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## BACKGROUND ART

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Currently, a wide variety of media are used to disseminate information. Media, such as television, radio and the Internet, are used to distribute vast amounts of information to large numbers of individuals at remote locations. Because of this broad distribution, advertisers commonly use various media to promote products and services. One disadvantage of advertising through these media is that only a limited amount of information can be provided in the relatively brief period of time allotted to a commercial.

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Today, several data broadcasting systems can be used in cooperation with or to supplement the distribution of information via various media. Generally, data broadcasting can be described as distributing data to multiple remote locations from a single central location. Remote locations typically are locations spaced some distance from the central location, often several miles or even hundreds or thousands of miles from the central location. The central location may have a television or radio station broadcasting its normal day-to-day programming to receiving televisions or radios at the remote locations. A data broadcasting network can be used in conjunction with the primary television or radio signals to carry additional data related to the information carried by the primary signals.

One company that has done substantial work in implementing data broadcasting networks is Milestone Technologies, Inc. of Raleigh, North Carolina. This company has developed a communications program called SATX™ that transfers binary data files over data broadcasting networks. This program can be used in data broadcasting networks utilizing television subcarriers, the vertical blanking interval (VBI) of a television signal, radio subcarriers, the radio data system (RDS), radio broadcast data system (RBDS), direct broadcast satellites or several types of broadcasting networks. By way of further explanation, television subcarriers are television signals having a different frequency from the main signal carrying the normal television programming. Similarly, the vertical blanking interval of a television signal provides an open portion of the signal over which data may be broadcast independently of the primary programming being broadcast for conversion to a visually and audibly perceptible form on a television. Radio stations also transmit subcarrier signals along with their main signal. For example, FM subcarriers are available for transmitting data in addition to the normal radio programming. RDS and RBDS also provide additional signal space over which data may be broadcast in addition to the normal programming received by an individual on his or her radio receiver. The SATX™ program allows the distribution of songs, advertisements or other data files independent of the normal programming via the use of television or radio subcarriers as well as some of the other forms of data broadcasting networks.

One problem with this type of system is that all of the desired broadcast data must be included in the secondary broadcast signal. This can cause difficulties

when attempting to broadcast a large amount of data. It can also cause difficulties in transfer of the data at a sufficiently rapid rate. In other words, if the end user desires to capture this information in a storage vehicle, such as a digital memory of a personal computer, the rate at which data is transferred to the memory must be sufficiently high to permit transfer of all the data before the secondary broadcast signal changes.

It would be advantageous to use the secondary signal carrier for carrying a relatively small amount of information, such as a telephone number, that could easily be captured on a processor such as in a personal computer. This signature data, e.g., telephone number, could then be used to call a specific site having the stored data, such as advertising information, musical data or visual data files. These data files then could be transferred back to the user's computer or other storage device at a more convenient rate and potentially at a more convenient time, such as during an off-peak billing period on the telecommunication network being used.

#### DISCLOSURE OF THE INVENTION

The present invention features a system for transferring data. The system includes a data broadcasting station capable of emitting a main signal portion and a secondary signal portion having a signature corresponding to the main signal portion. A receiver system has a primary receiver to receive and present information carried by the main signal portion in a form perceptible by a human. The receiver system also includes a secondary receiver to receive the secondary signal portion. The receiver system further includes a processor coupled to the secondary receiver that is able to selectively transmit the secondary signal portion to a specific site via a telecommunications network. A data relay system is configured to receive the transmitted secondary signal portion and in response transmit specific data back to the processor for receipt by the human.

According to another aspect of the invention, a method is provided for giving a person access to desired data related to information being broadcast via a given media. The method comprises the steps of emitting a main signal portion from a broadcast location, and emitting a secondary signal portion from the broadcast location, wherein the secondary signal portion is correlated to the main signal portion. The main signal portion is converted to a human perceptible form at a receiving location. At this

receiving location, the secondary signal portion is placed in a form, such as a telephone number, transmittable through a telecommunications network to a specific site.

According to yet another aspect of the invention, a system is provided to permit a user to obtain data related to information perceptible via a given medium. The system includes a receiver system having a primary receiver to receive and present information, carried by a main signal portion, in a form perceptible to a human. A secondary receiver is adapted to receive a secondary signal portion simultaneously with the main signal portion. A modem cooperates to convert the secondary signal portion to a form that may be transmitted over a telecommunications network. The secondary signal portion has characteristics that will direct it to a specific site in the telecommunications network. The system further includes a memory for storing information provided via the telecommunications network in response to the users directing the secondary signal to the specific site.

#### BRIEF DESCRIPTION OF DRAWINGS

The invention will hereafter be described with reference to the accompanying drawing, wherein like reference numerals denote like elements, and:

Figure 1 is a schematic representation of a data transfer system according to a preferred form of the present invention.

#### BEST MODES FOR CARRYING OUT THE INVENTION

The present invention relates generally to the transfer of data. Distributors of information, whether it be for sale or advertising purposes, are constantly striving to find more efficient ways to transfer data, (i.e., information) to those end users most interested in the information. Various types of media are used to build awareness or sell products or services to those who may be interested. For example, advertisers routinely use television as a media to advertise products and services. Typically, a company or organization will purchase slots of time in which to advertise various products and services in the hope that individuals will become interested in purchasing

the product or service. The commercial slots provide the distributor of information a limited time in which to provide information about a given product or service to a person watching a particular program on television. Similarly, radio is used for both direct advertising and the airing of music or topical discussions. In any of these

5 examples, it often would be advantageous to the distributor of information to have a mechanism by which persons listening to or viewing the information could obtain additional information related to that which is being perceived. For instance, if a person is interested in the product or service being advertised, he or she may wish to obtain additional information prior to making a purchase. Likewise, a person enjoying a

10 specific song or topical discussion, may wish to have easy access to a copy, such as a digital copy, of the song or discussion. The present invention provides a system by which persons perceiving the media can readily obtain such additional information.

A preferred embodiment of the present invention will be described with reference to Figure 1. Generally, a data distribution system 10, according to a preferred

15 embodiment of the invention, includes a data distribution station 11 disposed at a given location to broadcast or otherwise distribute data to a plurality of receiver systems 12. Each receiver system 12 is disposed at its own unique location, such as in the home of an individual or individuals using the receiver system. Receiver system 12 permits an individual to view or listen to a media broadcast and also gives that individual, or other

20 requestor, such as an automated monitoring system, the option of obtaining additional data related to the program being watched, listened to or otherwise monitored. Receiver system 12 allows the requestor to automatically access a data relay station 14 located at a specific site 15 accessible via a telecommunications network 16, which typically is a network of telephone lines, either hardwired or cellular (e.g., RF) or some combination

25 of the two.

Specifically, data distribution station 11 can have a variety of forms, but it typically would be a television station or radio station able to broadcast signals that carry the station's programming. Data distribution station 11 emits a main signal portion 18 and a secondary signal portion 20. For example, if data distribution station

30 11 is a television station, main signal portion 18 may be an electromagnetic type signal emitted at a conventional television frequency to carry the station's programming. The secondary signal portion 20, on the other hand, may be carried on a television subcarrier

frequency having a frequency different than the frequency carrying main signal portion 18. Alternatively, secondary signal portion 20 potentially may be carried in the vertical blanking interval (VBI) of the television signal. Similarly, if data distribution station 11 is a radio station, main signal portion 18 could be carried via a conventional radio signal found in the electromagnetic spectrum within a specific range of frequencies. Secondary signal portion 20, on the other hand, could be emitted via RDS, RBDS or radio subcarrier frequencies. Regardless of the specific types of main and secondary signal portions, the secondary signal portion 20 carries a small amount of data that correlates to or is a signature of main signal portion 18. In the typical arrangement of the inventive system, secondary signal portion 20 is representative of a telephone number or other number that can be used to locate a specific site 15 in a telecommunications network. Thus, the actual amount of data carried by secondary signal portion 20 is a relatively small amount in comparison to the data carried by main signal portion 18. As described above, communications programs are available, such as the SATX™ program, that readily allow the broadcast of specific data over what has been referred to as the secondary signal portion via diverse types of broadcasting networks, including direct broadcast satellites, television subcarriers or VBI, radio subcarriers, RDS or RBDS, as well as others.

Each receiver system 12 is designed to receive both main signal portion 18 and secondary signal portion 20 and to place secondary signal portion 20 in a form transmittable through telecommunications network 16 to a specific site 15. In a preferred embodiment, receiver system 12 includes a primary receiver 22 and a secondary receiver 24. Primary receiver 22 and secondary receiver 24 may be a combined unit, but primary receiver 22 is designed to convert the data carried by main signal portion 18 into a form perceptible by an individual, while secondary receiver 24 is designed to receive secondary signal portion 20. Depending on the specific type of system, primary receiver 22 may be, for instance, a radio that converts the information carried by main signal portion 18 into audible form or a television able to convert the data carried by main signal portion 18 into an audible and/or visual form perceptible through a display monitor 26.

Secondary receiver 24 cooperates with a processor 28 to convert the data carried by secondary signal portion 20 into a form that may be sent through



telecommunications network 16. In the preferred embodiment, processor 28 is a personal computer 30 including a microprocessor 31, a memory 32, typically some type of digital storage medium, and a modem 34. Preferably, secondary receiver 24 is connected to a serial port of personal computer 30.

5                Depending on the design of the overall system and the type of secondary signal portion 20 emitted from data distribution station 11, the secondary receiver 24 is designed appropriately to receive the specific type of signal, and transfer the carried data or information to processor 28. For example, if secondary signal portion 20 is carried on a radio subcarrier frequency, such as an FM subcarrier, there are several manufacturers  
10                that produce subcarrier data receivers that can be interfaced with the serial port of personal computer 30. Exemplary manufacturers are Applied Microtechnology Inc. of Kansas City, Kansas, Mainstream Data Inc. of Salt Lake City, Utah, Modulation Sciences of Somerset, New Jersey, and SCA Data Systems of Santa Monica, California. If, on the other hand, secondary signal portion 20 is carried by a television subcarrier or  
15                in the vertical blanking interval of a television signal, there are also several manufacturers that produce hardware able to receive such a signal and transfer the data to the serial port of a PC. Exemplary manufacturers include Norpak Corporation of Kanata, Ontario Canada, Applied Microtechnology, Inc. of Kansas City, Kansas, Broadcast Video Systems Ltd. of Richmond Hill, Ontario Canada, and EEG Enterprises  
20                of Farmingdale, New York.

                  Regardless of the specific type of secondary signal portion 20 or secondary receiver 24, processor 28 preferably includes a capture program that is able to capture the telephone number or other data transferred from secondary receiver 24, and send that data to the specific site 15 in response to the requestor (e.g. individual or  
25                automated system) monitoring receiver system 12. For example, the personal computer 30 may include a TSR program to monitor the serial port and stay ready to transmit the data carried by secondary signal portion 20 via modem 34 on a given input from the requestor as is readily understood by one of ordinary skill in the art. For instance, receiver system 12 can be programmed to place an applicable icon on either the display  
30                monitor 26 of primary receiver 22 or on a screen of personal computer 30, thereby allowing a human requestor to use a conventional mouse to click on the icon when he or she desires to call data relay station 14 to obtain additional data, e.g., information related

to the programming being perceived through the primary receiver 22.

The data distribution system 10 and the method of the present invention can potentially access numerous specific sites 15. The actual specific site 15 and data relay station 14 accessed by the requestor at receiver system 12 would depend on the telephone number carried by the secondary signal portion 20 being transmitted simultaneously with a specific program or advertisement carried by main signal portion 18. For example, secondary signal portion 20 may carry one telephone number during the airing of a particular television program, allowing a viewer to obtain additional information related to the program. However, during the airing of each commercial advertisement, a different telephone number would be carried by secondary signal portion 20. The various telephone numbers would allow the viewer to click on the icon during a desired song, program or advertisement, and a specific data relay station would be accessed. That data relay station typically would be designed to send information related to the specific program, song, product or service to the receiver system location from which the telephone number had been transmitted to that specific site 15 via telecommunications network 16.

Although data can be relayed back to the receiver system location in a variety of ways, it is preferred that the data be transferred digitally over telecommunications network 16 to processor 28 where it can be stored in memory 32. Thus, those using various media for musical programming, video programming or advertising would have a system by which individuals listening to or viewing the media could easily order copies of videos, songs or additional information related to the advertisements to which they are exposed. Digitized information would then be transferred back over the telecommunications network 16 to the requesting receiver system 12 where it is stored in memory 32. Each data relay station 14 may include a memory for digitally storing specific data, and potentially can be fully automated to send back digital information. However, hard copies, e.g. text or compact disks, could also be returned by mail or other physical transfer system.

Furthermore, the telecommunications network 16 can have a variety of forms. For example, the Internet or a comparable system could be used for both the transfer of the secondary signal portion 20 from the processor 28 to the data relay station 14 as well as the transfer of the additional data back from the specific data relay station

14 to the processor 28 from which the request originated. Additionally, the telephone number carried by secondary signal portion 20 could be transmitted directly over telecommunications network 16 via a standard telephone number, such as a 1-800 or 1-900 phone number.

5               The system described above is advantageous in that it permits a relatively small amount of data to be carried by secondary signal portion 20. Additionally, the individual (or other monitoring device) watching or listening to a specific media broadcast carried by main signal portion 18 does not need to be there at the beginning of the program or commercial, because preferably the data, e.g., telephone number, carried  
10 by secondary signal portion 20 will be transmitted continuously during broadcast of that specific program or commercial. Thus, the requestor can selectively order additional information any time during the broadcast. Furthermore, whether the additional data be a copy of a video presentation, song, or additional information related to an advertised product or service, the data can be transferred digitally back to the requesting receiver  
15 system 12 during a time period when telecommunication network 16 is less heavily used or when the usage rates are lower. This is particularly helpful if large digital data files, such as songs or video presentations, are to be transferred from the data relay station 14 at a specific site 15 back to the receiver system 12 of the requestor ordering that particular data.

20               It will be understood that the foregoing description is of preferred exemplary embodiments of this invention and that the invention is not limited to the specific form shown. For example, various types of signals, including electromagnetic frequencies, can be used to transmit main signal portion and secondary signal portion from the data distribution station. The secondary signal portion need not necessarily be  
25 of the same type of signal as the main signal portion. The primary receiver, secondary receiver and processor can be individual components or combined or integrated in a variety of ways. Additionally, if a personal computer is used in the system, it may be advantageous to use a single display monitor for both the computer and the media receiver. These and other modifications may be made in the design and arrangement of  
30 the elements without departing from the scope of the invention as expressed in the appended claims.

### CLAIMS

What is claimed is:

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1. A system (10) for facilitating the gathering of data by an individual, the data being related to broadcast media perceptible to the individual, the system (10) being characterized by:

10 a data distribution station (11) disposed at a distribution location and capable of emitting a main signal portion (18) and a secondary signal portion (20) having a signature corresponding to the main signal portion (18);

15 a receiver system (12) disposed at a receiver location remote from the distribution location, the receiving system (12) having a primary receiver (22) to receive and present information carried by the main signal portion (18) in a form perceptible by an individual, a secondary receiver (24) to receive the secondary signal portion (20) and a processor (28) coupled to the secondary receiver (24) and able to selectively transmit data carried by the secondary signal portion (20) over a telecommunications network (16); and

20 a data relay system (14) configured to receive the transmitted secondary signal portion (20) to facilitate the transfer of specific data back to the receiver location.

2. The system (10) as recited in claim 1, wherein the main signal portion (18) is an electromagnetic signal having a frequency within a first frequency range and the secondary signal portion (20) is an electromagnetic signal having a frequency within a second frequency range.

3. The system (10) as recited in claim 2, wherein the main signal portion (18) and the secondary signal portion (20) are television signals.

30 4. The system (10) as recited in claim 2, wherein the main signal portion (18) and the secondary signal portion (20) are radio signals.

5. The system (10) as recited in claim 2, wherein the data relay system (14) includes a digital memory for storing the specific data.

5 6. The system (10) as recited in claim 1, wherein the processor (28) comprises a personal computer (30) having digital storage capacity (32) for storing the specific data.

7. The system (10) as recited in claim 1, wherein processor (28)  
10 includes a modem (34) to facilitate transmission of the secondary signal portion (20) via the telecommunications network (16).

8. The system (10) as recited in claim 4, wherein the secondary signal portion (20) is carried on a radio frequency subcarrier.

15 9. The system (10) as recited in claim 4, wherein the secondary signal portion (20) is carried via RDS.

10. The system (10) as recited in claim 2, wherein the main signal  
20 portion (18) and the secondary signal portion (20) are transmitted to receiver system (12) via direct broadcast satellite.

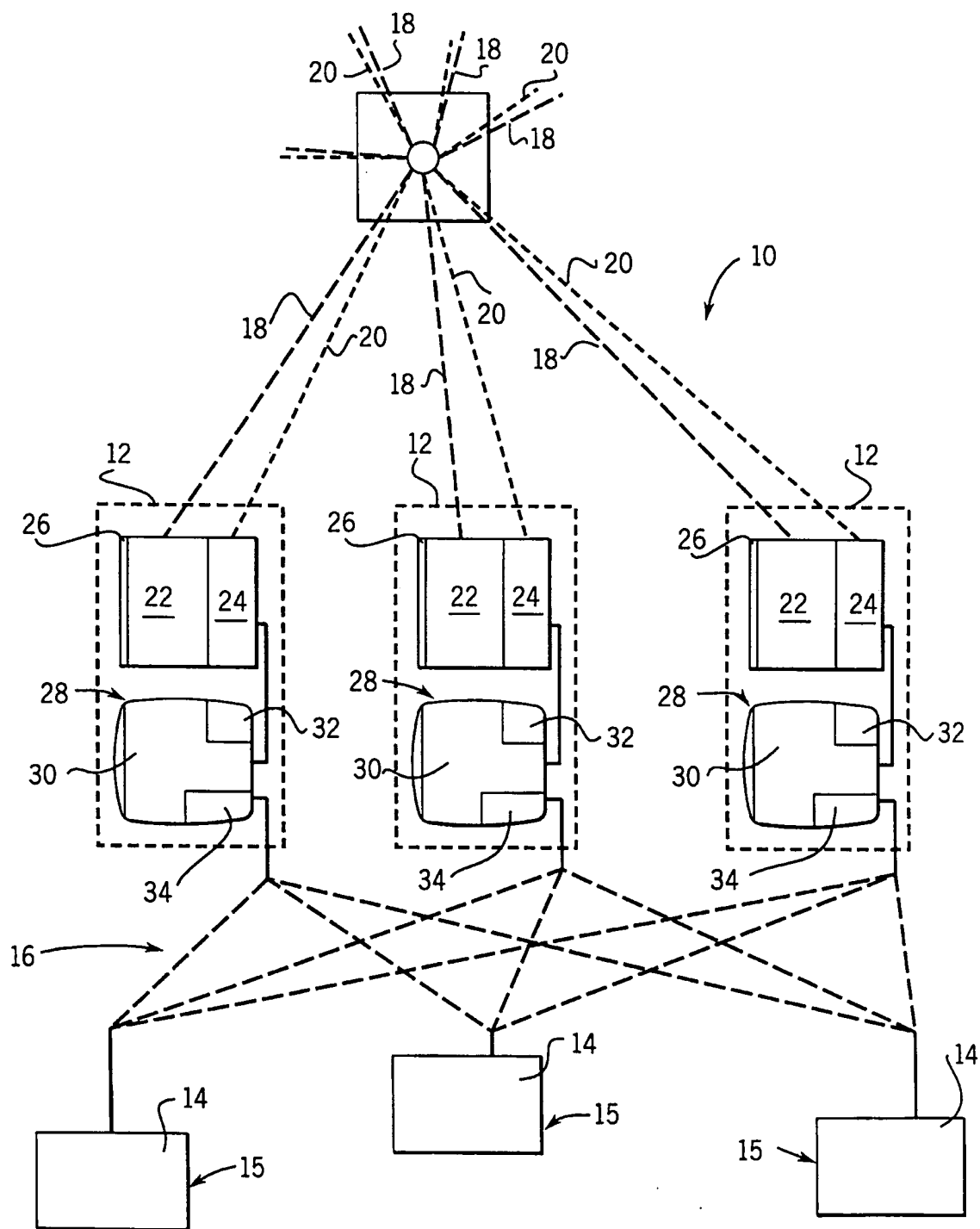


FIG. 1

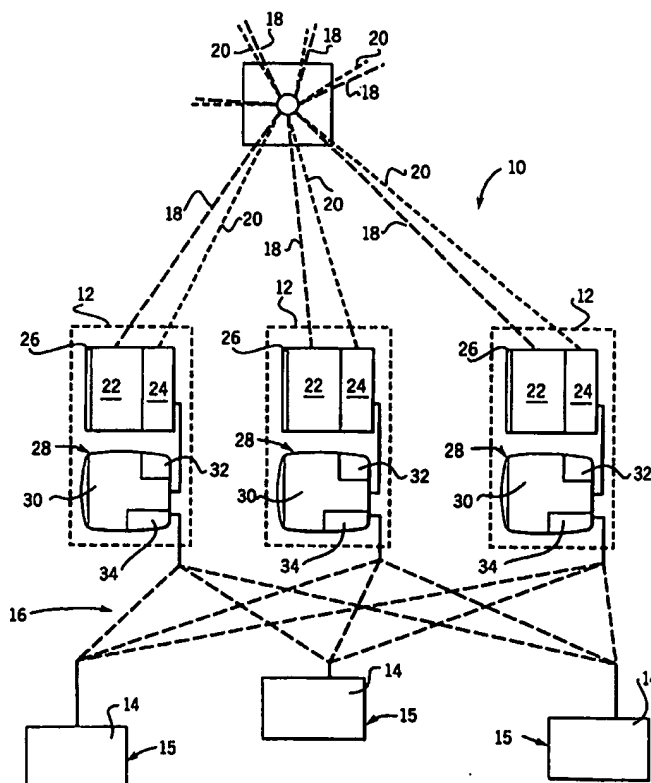


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<b>(21) International Application Number:</b> PCT/US97/23084 <b>(22) International Filing Date:</b> 15 December 1997 (15.12.97)  <b>(30) Priority Data:</b> 08/772,416      23 December 1996 (23.12.96)      US  <b>(71)(72) Applicant and Inventor:</b> YAVITZ, Edward, Q. [US/US]; 3828 Spring Creek Road, Rockford, IL 61114 (US).  <b>(74) Agent:</b> VAN SOMEREN, Robert, A.; 2544 North 81st street, Wauwatosa, WI 53213 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  <b>(88) Date of publication of the international search report:</b> 3 September 1998 (03.09.98)

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/23084

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04M 11/00

US CL :379/90.01

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 379/90.01,93.01,93.05-93.08,93.11,93.14,93.17,93.26,93.27,93.37,110.01,212-214,354-357

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,847,886 A (CHUMLEY) 11 July 1989, entire patent.	1-10
X	US 5,262,860 A (FITZPATRICK et al) 16 November 1993, see entire patent.	1-10
X	EP 0 673 164 A (ISENBERG et al) 20 September 1995, see entire publication.	1-10

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